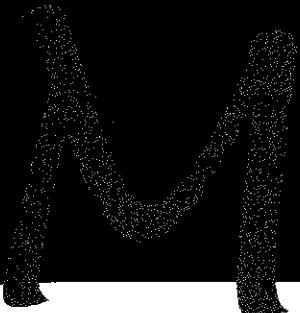


# **EXHIBIT 15**



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**TABLE 2.5 Cross-Price Elasticities of Demand for Selected Meat Products\***

	Price of Beef	Price of Pork	Price of Chicken
Demand for beef	-0.65**	0.01***	0.20
Demand for pork	0.25	-0.45	0.16
Demand for chicken	0.12	0.20	-0.65

\*Sources: Table 1-4 in Daniel B. Suits, "Agriculture," Chapter 1 in *The Structure of American Industry*, 8th ed., Walter Adams and James Brock, eds. (Englewood Cliffs, NJ: Prentice-Hall, 1990).

\*\*This is the price elasticity of demand for beef.

\*\*\*This is the cross-price elasticity of demand for beef with respect to the price of pork.

**demand substitutes** Two goods related in such a way that if the price of one increases, demand for the other increases.

where  $P_j$  denotes the initial price of good  $j$  and  $Q_i$  denotes the initial quantity of good  $i$  demanded. Table 2.5 shows cross-price elasticities of demand for selected meat products.

Cross-price elasticities can be positive or negative. If  $\epsilon_{Q_i, P_j} > 0$ , a higher price for good  $j$  increases the demand for good  $i$ . In this case, goods  $i$  and  $j$  are **demand substitutes**. Table 2.5 shows examples of demand substitutes. For example, the fact

#### APPLICATION 2.4

### How People Buy Cars: The Importance of Price

Table 2.6 presents estimates of the cross-price elasticities of demand for some of the makes of automobiles shown in Table 2.3. (The table contains the price elasticities of demand for these makes as well.) The table shows, for example, that the cross-price elasticity of demand for Ford Escort with respect to the price of a Nissan Sentra is 0.054, indicating that the demand for Ford Escorts goes up at a rate of 0.054 percent for each 1 percent increase in

the price of a Nissan Sentra. Although all of the cross-price elasticities are fairly small, note that the cross-price elasticities between compact cars (Sentra, Escort) and luxury cars (Lexus LS400, BMW 735i) are zero or close to zero. This makes sense: Compacts and luxury cars are distinct market segments. Different people buy BMWs than buy Ford Escorts, so the demand for one should not be much affected by the price of the other. By contrast, the cross-price elasticities within the compact segment are relatively higher. This suggests that consumers within this segment view Sentras and Escorts as substitutes for one another.

**TABLE 2.6 Cross-Price Elasticities of Demand for Selected Makes of Automobiles\***

	Price of Sentra	Price of Escort	Price of LS400	Price of 735i
Demand for Sentra	-6.528**	0.078***	0.000	0.000
Demand for Escort	0.054	-6.031	0.001	0.000
Demand for LS400	0.000	0.001	-3.085	0.093
Demand for 735i	0.000	0.001	0.032	-3.515

\*Sources: Adapted from Table VI in S. Berry, J. Levinsohn, and A. Pakes, "Automobile Prices in Market Equilibrium," *Econometrica*, 63 (July 1995): 841-890.

\*\*This is the price elasticity of demand for a Sentra.

\*\*\*This is the cross-price elasticity of demand for a Sentra with respect to the price of an Escort.